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CHEMICAL & ENGINEERING

NEWS

Better understanding of methyl isocyanate toxicity emerges
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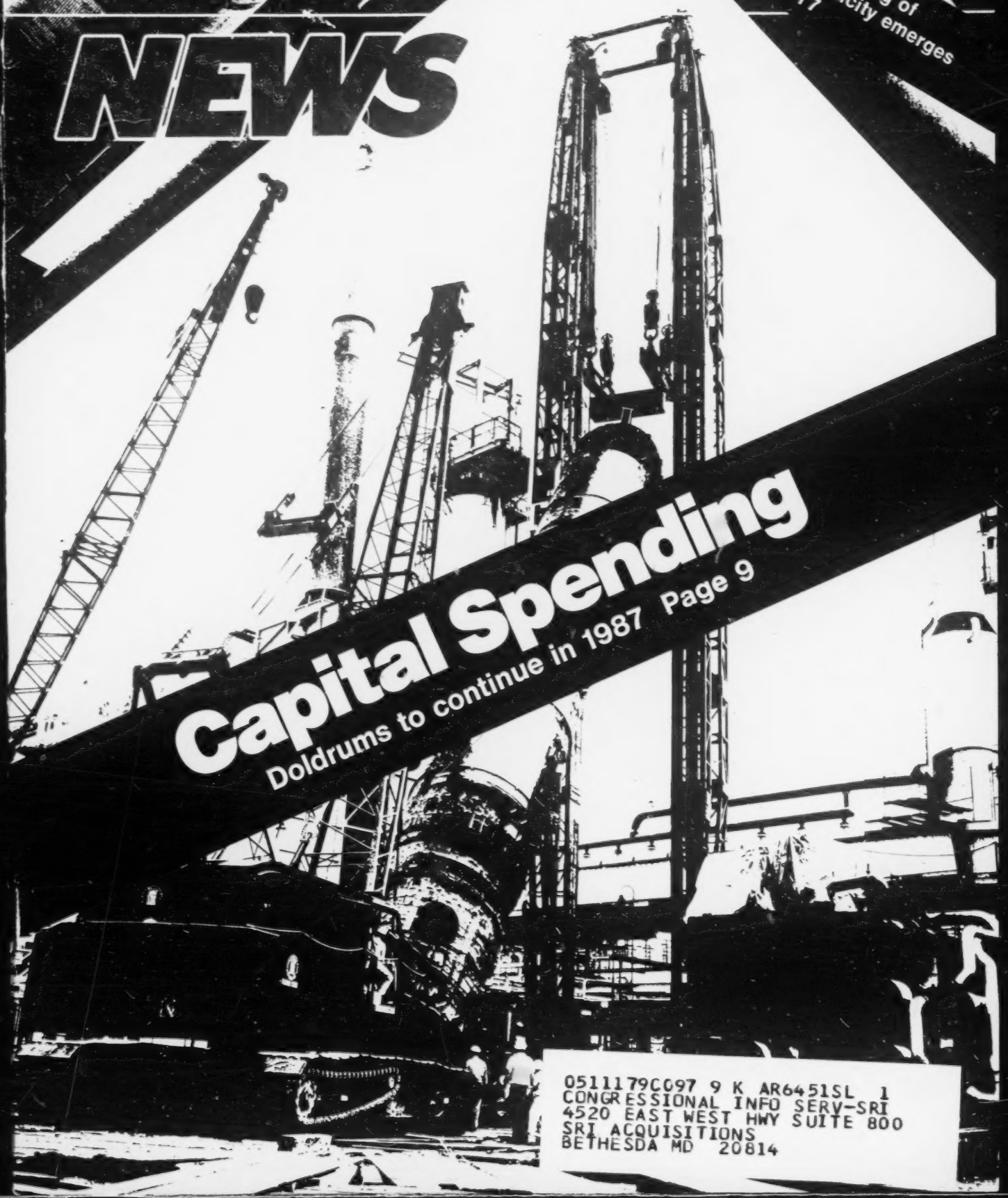

Capital Spending

Doldrums to continue in 1987 Page 9

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News of the Week

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■ **Jury decides Monsanto must pay $108 million to the family of a former employee who died of leukemia in 1980.** **Page 5**

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***Industrial & Engineering Chemistry Research* consolidates** three *I&EC* quarterlies into monthly issue to speed up publication of papers. **Page 21**

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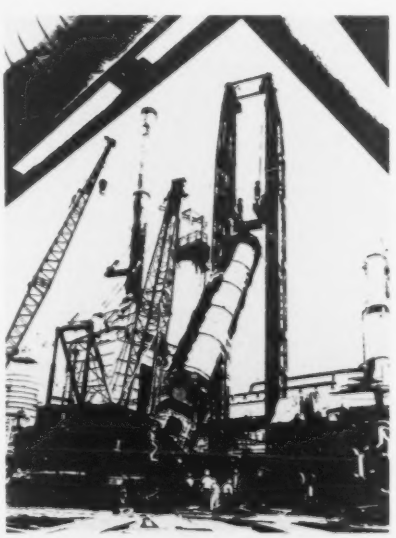

Cover Story

Chemical capital spending will see little gain in 1987 because of the slow growth in demand and the decline in crude oil prices. **Page 9**

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Chemical Capital Spending To Gain Less Than 1% in 1987

Low capacity utilization by major U.S. chemical firms will continue to hold expenditures on new plant and equipment in check

William J. Storck, C&EN New York

Capital expenditures by U.S. industry will not see any great gains next year, according to economists, as flat domestic demand and only slowly rising exports will continue to hold down the need for new plant and equipment. They point out that spending probably will decline this year, largely because of cutbacks by oil companies brought about by the decline in crude oil prices, and thus revenues. And they caution that, although 1987 may see something of a rebound, this may well be a moderate comeback because of continuing problems in the petroleum and also agricultural areas.

In fact, according to Charles B. Reeder, head of Charles Reeder Associates and former chief economist at Du Pont, the decline in oil prices and its subsequent drag on the economy may have more than offset any increase in consumer spending in 1986, thus causing a slower growth in the economy than if oil prices had maintained levels in effect at the beginning of the year.

This may have important implications for the U.S. chemical industry. A slowing of growth in the economy is usually reflected in the highly cyclical chemical industry. Thus next year probably will see continued slow growth. For an industry that already is seeing average capacity utilization at about 80% of theoretical nameplate, according to government figures, this adds up to a continued disincentive to invest in, at least, new plants, and probably plant additions, especially for commodity chemicals, as well.

This may well be compounded by forecast slowdowns in two of the chemical industry's big markets—housing and automobiles—and continuing troubles in the agricultural industry. Economists and tax experts are saying that the housing boom is nearing an end partly because of the elimination of many incentives to build in the new tax law and partly because the industry has caught up with demand and there is some softness in the housing market in many parts of the country.

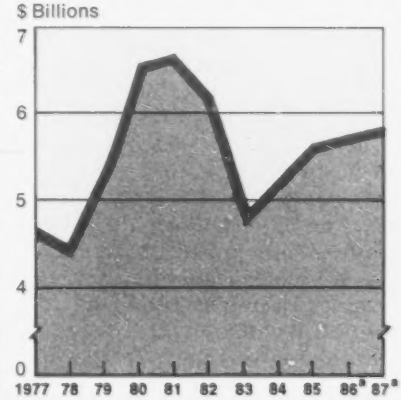
The auto industry will suffer some of the same ills as the housing sector. The tax law, in doing away with deductions for state sales taxes and interest on consumer loans, has moved some planned 1987 auto sales back into 1986, as has cut-rate financing offered earlier this year by the major car makers. Analysts say that these factors undoubtedly will cut into 1987 domestic car production, especially in the first half.

And, few economists see improvement in the farm economy next year, which has been buffeted by high yields, poor demand, and, like much of the rest of the economy, increased foreign competition.

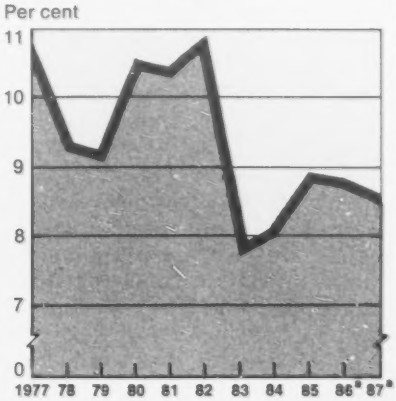
This all means that generally the chief factor that has affected the chemical industry since the last recession—slow demand growth—will continue. And this slow growth in demand once again will hold chemical capital spending low in relation to what it has been in the past. A survey of 12 leading chemical producers by C&EN shows a less than 1% growth in capital spending forecast for next year. This follows an increase of less than 2% in 1986 from last year. The results are based on 11 of the 12 companies. Du Pont, the largest chemical capital spender, had not responded by press time.

Therefore, next year again will see firms spending more on process improvements and plant streamlining than on brand new plants, a

Chemical capital spending remains below 1981 peak . . .



. . . and still lags as a percentage of sales



Note: Combined data from 12 major chemical producers. a C&EN estimate.

Chemical capital spending will be flat in 1987

$ Millions	1987 Total	1987 U.S.	1986 Total	1986 U.S.	Worldwide 1986 planned[a]	Worldwide 1985	Worldwide 1984	Worldwide 1983	Worldwide 1982	Change from previous year 1987	Change from previous year 1986
Air Products	$ 400	$ 268	$ 385	$ 270	$ 402	$ 392	$ 263	$ 246	$ 347	3.9%	−1.8%
American Cyanamid	265	212	265	212	200	203	200	165	171	0.0	30.5
Dow Chemical	980	560	920	552	900	806	781	630	829	6.5	14.1
Du Pont[b]	na	na	na	na	1205	1515	1369	1138	1463	na	na
Ethyl	145	138	125	119	135	90	103	85	92	16.0	38.9
W. R. Grace	300	213	244	177	390	348	380	353	560	23.0	−29.9
Hercules	200	170	250	213	215	234	218	168	174	−20.0	6.8
Monsanto	520	468	460	414	525	645	614	560	673	13.0	−28.7
Olin	140	133	135	128	110	154	165	123	139	3.7	−12.3
PPG Industries	400	na	540	na	410	452	315	450	452	−25.9	19.5
Rohm & Haas	200	125	170	110	200	159	134	72	126	17.6	6.9
Union Carbide	525	394	550	385	670	649[c]	670	761	1179	−4.6	10.0[c]
TOTAL	**$4075**	**$2681**	**$4044**	**$2580**	**$5362**	**$5647**	**$5212**	**$4751**	**$6204**		
ANNUAL CHANGE[d]	**0.8%**	**3.9%**	**1.5%**	**−0.5%**		**8.3%**	**9.7%**	**−23.4%**	**−7.4%**		

a Earliest estimates. b Excludes Conoco. c On a continuing business basis. 1985 capital spending was $500 million. Percentage change for 1986 is calculated using this figure. d Cumulative change for companies reporting. na = not available.

trend that has been prevalent in the chemical industry throughout the 1980s and one that has led many companies to spend more on R&D than on capacity expansion in the past few years.

The 1.5% increase in capital spending estimated by 11 companies in 1986 reflects the real world. At the beginning of this year, companies were predicting that capital spending would rise 2.3%, itself a modest increase and one that probably could not even keep pace with construction inflation. The even more modest 1.5% rise undoubtedly means that real capital spending in 1986 declined, a situation that will continue next year with its 0.8% forecast increase.

Despite the industry trend, some companies increased capital spending strongly in 1986. For instance, such spending at Ethyl Corp. rose almost 39% from 1985 to $125 million. And American Cyanamid's rose 31% to $265 million. At an analysts meeting in Philadelphia earlier this month, Cyanamid chairman George J. Sella Jr. said that much of the increase was for construction of manufacturing facilities for new products, particularly the company's new herbicides, and for new and expanded research laboratories for its medical and agricultural businesses. In spite of the increase, however, Cyanamid's capital spending this year will lag R&D spending, which is estimated at $280 million.

PPG Industries also raised capital spending significantly this year—almost 20% to $540 million. And capital expenditures at Dow Chemical are up about 14% this year to $920 million.

Other chemical firms with increased capital spending this year are Union Carbide, up 10% to $550 million; Rohm & Haas, up almost 7% to $170 million; and Hercules, up almost 7% to $250 million. In Carbide's case, the increase is on a "continuing business" basis. In other words, if the company, in 1985, had been made up of only those businesses that it has in 1986, capital spending last year would have been $500 million, instead of the $649 million reported in the 1985 annual report.

The increases at these firms were almost completely offset by declines at four other chemical producers. The largest of these declines was at W. R. Grace, whose estimated capital spending this year fell almost 30% to $244 million. It must be pointed out, however, that Grace has divested itself of a number of businesses, and so capital spending naturally would be down from the year before. Another firm that spent dramatically less this year was Monsanto, with a 29% drop to $460 million. Smaller declines were recorded for Olin, down about 12% to $135 million, and Air Products, down almost 2% to $385 million. Unlike the other companies, Air Products is figured on a fiscal-year basis with the year ending Sept. 30.

For next year, the 11 chemical companies are forecasting a combined increase in capital spending of just 0.8% over this year's spending. And although most of the companies are forecasting increased spending, the few that are not offset the rise. Grace forecasts the largest increase—23% to $300 million—followed by Rohm & Haas, up almost 18% to $200 million; Ethyl, up 16% to $145 million; Monsanto, up 13% to $520 million; Dow, up 7% to $980 million; Air Products, up 4% to $400 million; and Olin, up 4% to $140 million. Cyanamid, which had such a strong increase in 1986, says it will keep capital spending flat next year at $265 million.

Capital spending decreases are planned at PPG, down almost 26% to $400 million; Hercules, down 20% to $200 million; and Carbide, down nearly 5% to $525 million.

These companies' capital spending in the U.S. next year will outperform worldwide capital spending. The 10 companies that estimate U.S. capital spending will see it increase an average of almost 4% in 1987. This follows a decline of 0.5% in 1986. □